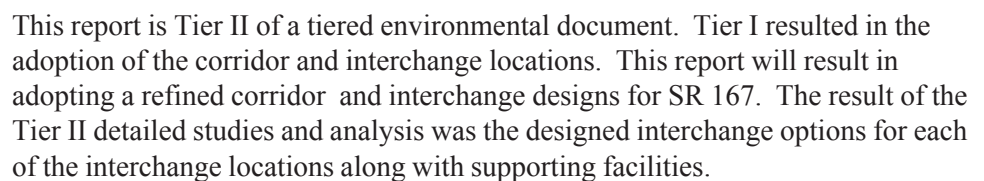


### Figure 1. Alignment of Proposed Build Alternative



### ***Purpose and Need***

- improve regional mobility of the transportation system;

- serve multimodal local and port freight movement and passenger movement between the Puyallup termini of the SR 167, SR 410, and SR 512 and the I-5 corridor, the new SR 509 freeway, and the Port of Tacoma;
- reduce congestion and improve safety;
- provide improved system continuity between the SR 167 corridor and I-5; and
- maintain or improve air quality in the corridor to ensure compliance with the current State Implementation Plan (SIP) and all requirements of the Clean Air Act (CAA).

The existing non-freeway segment of SR 167 from the Puyallup area to I-5 is on surface streets and includes a circuitous route through Puyallup, via Meridian Street and River Road. The high levels of congestion at intersections and the frequency of intersecting driveways contribute to relatively high accident ratios compared to statewide averages. Traffic projections for the year 2030 indicate the capacity problems at intersections will increase if action to complete the freeway is not taken.

Trucks transporting freight currently travel through the City of Fife via Valley Avenue East, 70th Avenue East, and 54th Avenue East. Several intersections along these routes operate at over-capacity conditions during peak traffic, resulting in traffic delays and congestion. The Port of Tacoma projected truck traffic to and from the Port to double from 300,000 to 600,000 trucks per year by the year 2014 (Tier I EIS, 1999). Anticipated problems include more congestion-related delays in freight transport, incompatibility of heavy truck use on residential surface streets creating unsafe conditions, and existing steep grades on Highway 18 from I-5 to I-90.

## **Alternatives and Options**

### **No Build Alternative**

Under the No Build alternative, the SR 167 freeway and corridor would remain in the present state except for minor improvements and maintenance. Hylebos Creek would not be relocated. Local jurisdictions would continue with planned improvements to their transportation systems. WSDOT would also continue making improvements to its facilities in the study area under this alternative. Local jurisdictions would have to modify comprehensive planning.

### **Build Alternative**

The build alternative consists of a four-lane freeway with two HOV lanes between I-5 and SR 161. It includes freeway-to-freeway connections with SR 509, SR 167, and I-5, new local access interchanges at 54th Avenue East and Valley Avenue, and completion of the SR 161 interchange. The truss bridge over the Puyallup River would be replaced. Hylebos Creek and Surprise Lake Drain would be relocated.

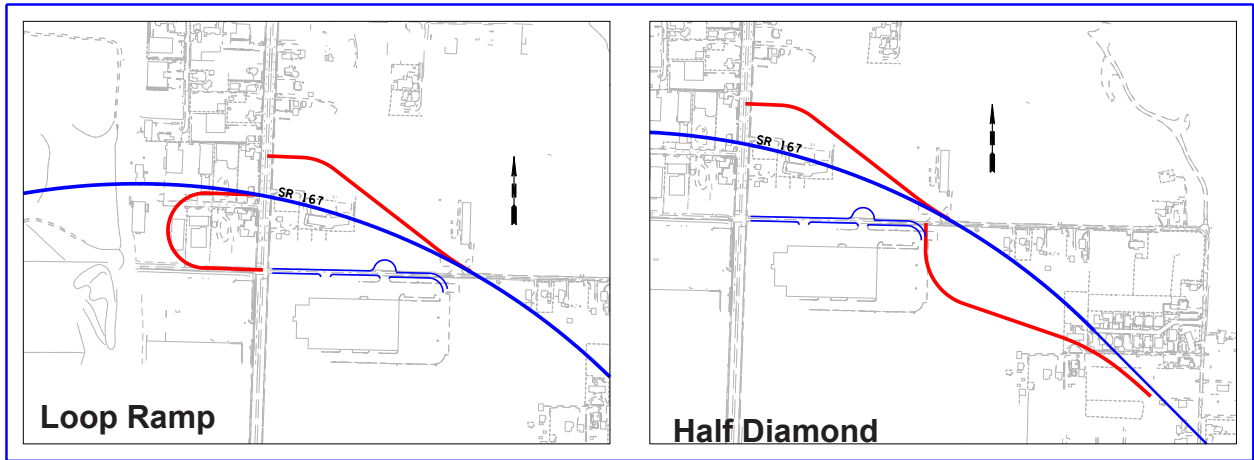
Within this corridor, the location of interchanges was determined in Tier I but design options for the interchanges are presented in this Tier II EIS.

Interchange design options include:

- 1) Two Options at 54th Avenue (Figure 2)

- 2) One Option at I-5 (Figure 3)
- 3) Three Options at Valley Avenue (Figure 4)
- 4) Three Options at Meridian Road (SR 161) (Figure 5)

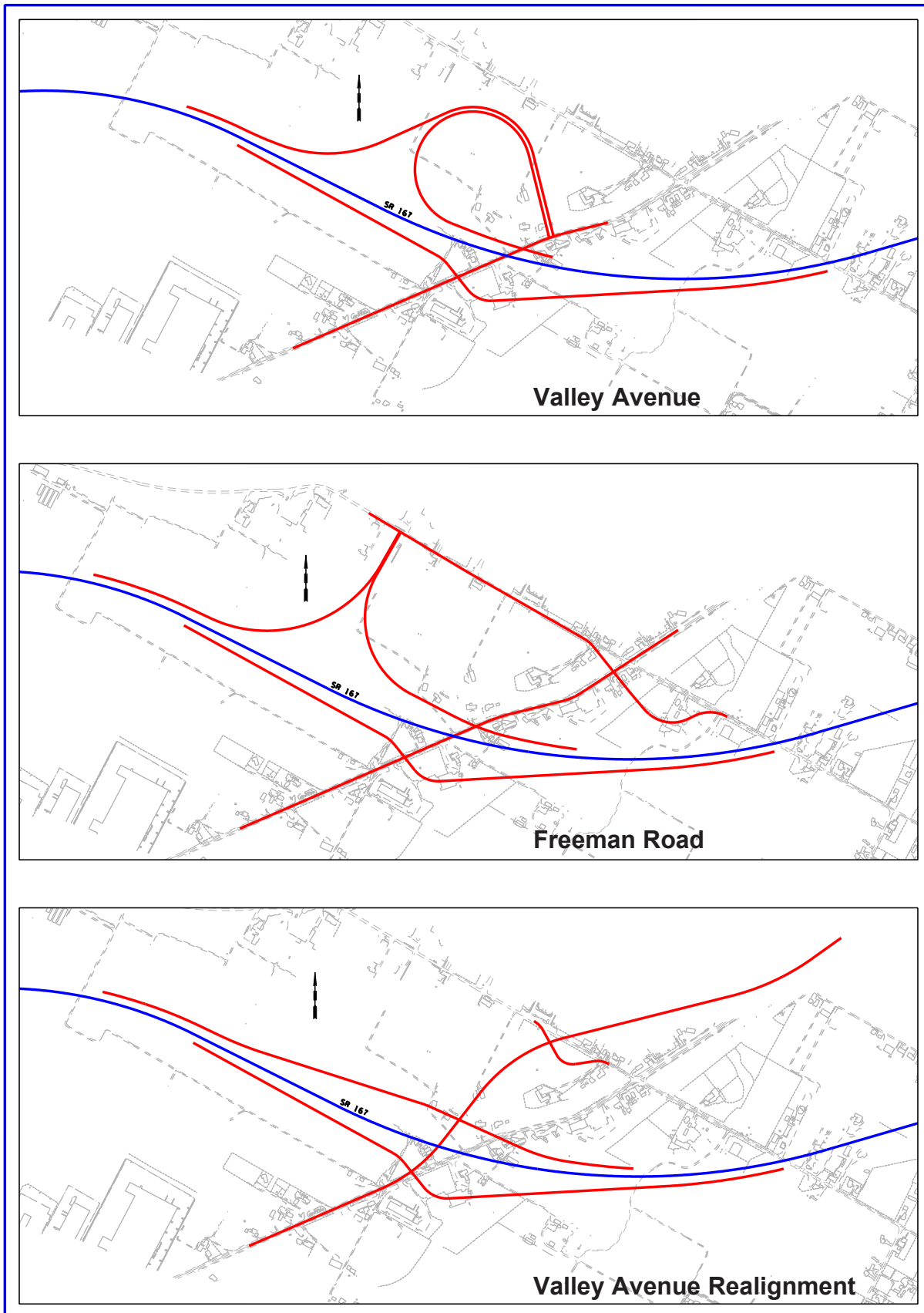
**Figure 2. Two options at 54th Avenue**



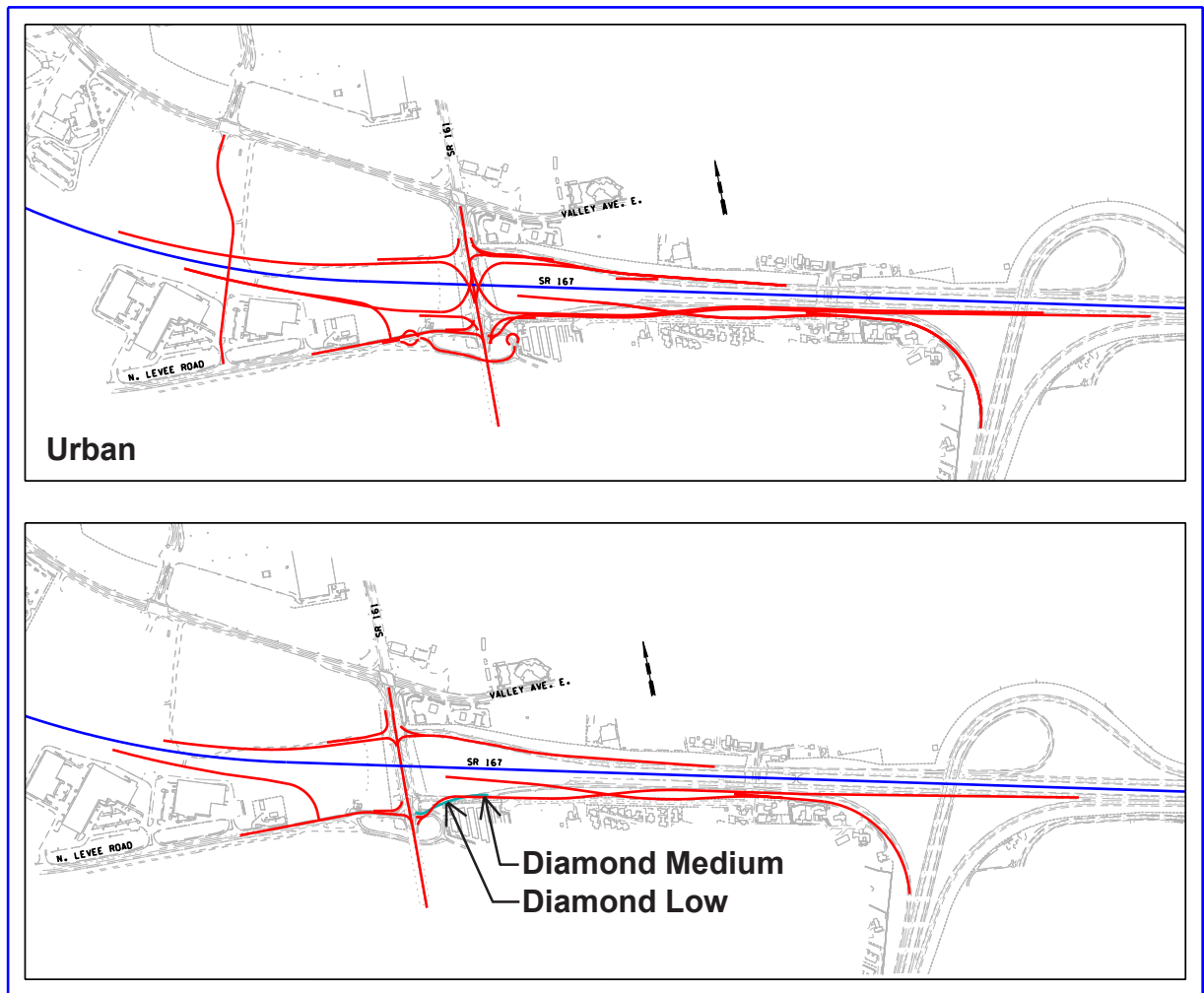
**Figure 3. One option at I-5 Interchange**



**Figure 4. Three options at Valley Avenue**



**Figure 5. Three Options at Meridian Road (SR 161)**



## ***Project background***

### **Early identification of need**

In the 1950's, a regional highway plan was developed, which included SR 167 from Renton to I-5. After issuance of a Design Report and Access Report, work on the project in the Puyallup Valley was halted in the late 1970's because of uncertainty regarding ownership of the Puyallup Tribal lands in the area. In the late 1980's SR 167 was completed from I-405 in Renton to SR 512 in Puyallup. The ownership issue was resolved in 1989, thus allowing the SR 167 extension to move forward. In 1990 the Washington State Legislature provided funds for the development of the SR 167 completion project. The Tier I EIS started in 1990 and was completed in 1999. The Tier II EIS began in July 1999 and is currently in public review of the Tier II Draft EIS.

### **Tier I**

At the beginning of the EIS process in 1990, the Federal Highway Administration (FHWA) and WSDOT decided to tier the EIS process into two steps as permitted in the federal guidelines under National Environmental Policy Act (NEPA). The Tier I EIS evaluated different corridor options and selected a preferred corridor

and interchange locations. This Tier II EIS evaluates interchange options within the selected corridor. In both cases, the selection process involves evaluating the environmental consequences of different alternatives and identifying ways to avoid, minimize, or mitigate the environmental impacts.

Development of the Tier I Draft EIS began in 1990 with a public review process. The Tier I Draft EIS was published in June of 1993 and a public hearing was held on July 15, 1993. FHWA required WSDOT to prepare a Major Investment Study (MIS), completed in October 1995, which evaluated the effectiveness of four alternatives. In February 1998, the Puyallup Tribe expressed support for the build alternative extending SR 167. The Tier I Final EIS was published in April 1999 and the Record of Decision was issued by FHWA in June 1999.

The Tier I EIS evaluated three corridors and a no build alternative after initially considering seven preliminary alternative corridor locations. Alternative 2 had the best mix of features for avoiding, minimizing, and mitigating environmental impacts while still meeting the purpose and need for the project. Therefore, Alternative 2 was selected as the preferred corridor in the Tier I Final EIS and is the basis for the Build Alternative studied in this document.

### **Signatory Agency Committee Approval**

Several federal and state agencies have signed an agreement regarding projects that require a NEPA Environmental Impact Statement and are anticipated to require a Clean Water Act Sec. 404 permit. Signatory agencies include the Federal Highway Administration (FHWA), Washington State Department of Transportation (WSDOT), U.S. Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, NOAA Fisheries, Washington Department of Ecology, and the Washington Department of Fish and Wildlife. The agreement commits the FHWA and WSDOT to seek concurrence on three decisions as the EIS is being developed. These three points are:

- Project Purpose and Need, criteria for alternative selection.
- Project Alternatives to be evaluated in the DEIS.
- The Preferred Alternative and Mitigation Plan

The SR 167 Tier II EIS has received concurrence on the Purpose and Need and Range of Alternatives. Concurrence on the Preferred Alternative and Mitigation Plan will be sought after the public comment period on this Draft Tier II EIS.

### ***Plans for the area***

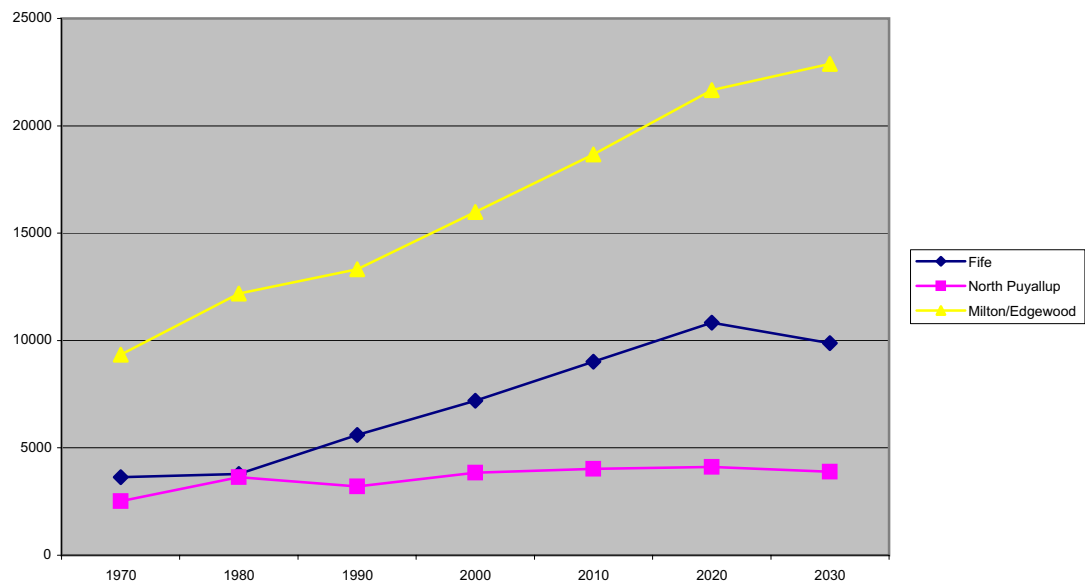
The landscape surrounding the study area is changing as a result of growth planning conducted by Pierce County and the cities of Fife, Puyallup, Edgewood, Milton, and Tacoma. Each of these jurisdictions has developed a comprehensive plan to document their planned growth.

Considerable population growth has occurred in the study area and Pierce County. This growth is forecasted to continue through 2030. Between 1990 and 2000, the Pierce County population increased 19.51 % from 586,203 to 700,600. During



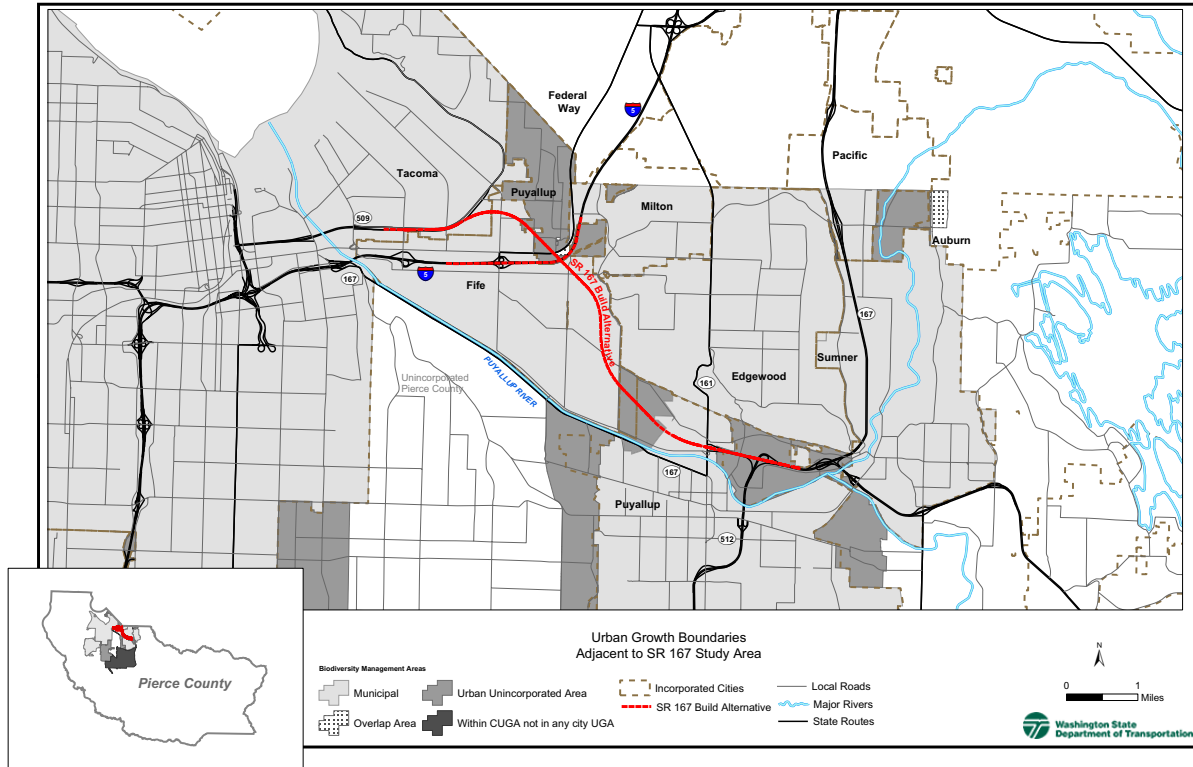
the same period, the Cities of Fife and Puyallup have grown at a more rapid rate: 31.9% and 29.6%, respectively. Future growth estimates for Pierce County show a similar growth rate to that experienced in the past (OFM, 2000). Year 2030 growth projections for the state as a whole shows a 15 percent increase in population per decade. Forecast Area Zones According to the Forecast Analysis Zone (FAZ) data, provided by the Puget Sound Regional Council (PSRC) and updated by Pierce County, Fife is expected to grow by 2,617 persons for a total population of 8,986 persons in the year 2030. Milton/Edgewood, on the edge of the study area, is expected to grow to 22,891 from 14,238 in the year 2030, while North Puyallup is forecasted to decrease from 4106 to 3,884 persons. This decrease is based on a shift from projected residential to commercial properties. Figure 6 summarizes population trends documented by Pierce County from 1970 to 2030.

**Figure 6. Population Growth in the Proposed SR 167 Corridor**



The Washington State Growth Management Act (GMA) was passed in 1990 to address environmental, land use, and sustainable economic development issues related to unplanned growth in specific areas. The GMA calls for the identification of Urban Growth Boundaries for counties and cities planning under the Act. The proposed project would be constructed within the Urban Growth Boundary for Pierce County and Urban Growth Areas of Tacoma, Puyallup, Fife, and Milton/Edgewood. The Urban Growth Boundaries for Pierce County and the cities along the proposed corridor are shown in Figure 7.

**Figure 7. Urban Growth Boundaries adjacent to the SR 167 Study Area.**



*Destination 2030* is the 2001 update of the 1995 Metropolitan Transportation Plan (MTP). *Destination 2030*, the transportation element of *VISION 2020*, emphasizes an integrated multi-modal transportation system and describes the regionally significant modal components of that system. The MTP serves as a planning tool used to identify regional transportation problems and analyze and develop regional solutions, and it serves as a focus for required state and regional transportation system performance monitoring, particularly for the federally mandated congestion management system. In Spring 2002, *Destination 2030* was updated and refined by the PSRC.

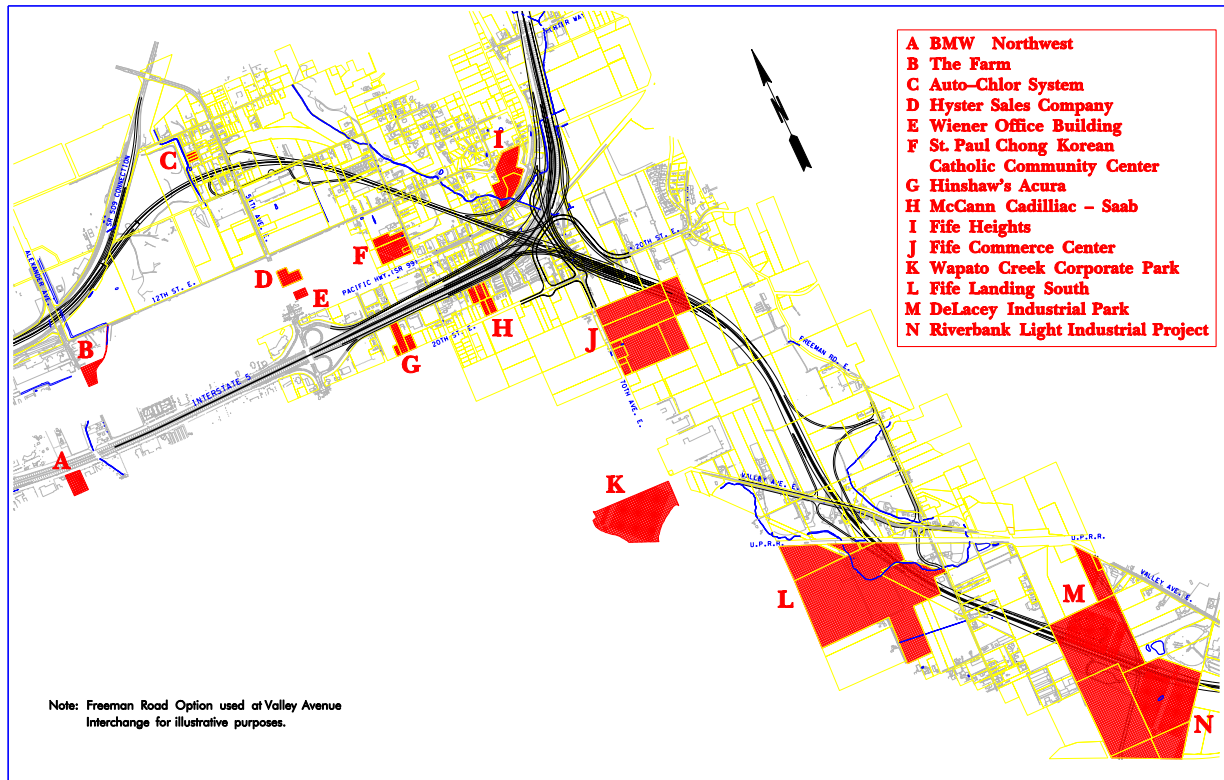
*Destination 2030* functions as the transportation element of *VISION 2020*. *VISION 2020* describes a regional land use pattern consistent with and supportive of the state's Growth Management Act (GMA) policies. *Destination 2030* provides the regional transportation system to support the planned growth. The local comprehensive plans for cities in the study area were developed within the framework of *VISION 2020*. The Build Alternative for the SR 167 study is consistent with all local jurisdictions' adopted land use zoning. The SR 167 Build Alternative is consistent with GMA in that it supports implementation of the envisioned regional land use pattern.

#### *Other Planned Actions*

The land use in the vicinity of the Build Alternative is planned for urban industrial uses. A number of projects are currently proposed in the area. Figure 8 shows the locations of planned projects that are currently in development. Additional projects planned by the Port of Tacoma, for which we could not obtain specific locations, are listed in this Draft Environmental Impact Statement.



**Figure 8. Image of planned projects**



## Secondary Impacts

Secondary impacts are defined by the Council on Environmental Quality as impacts that are “caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable (40 CFR Section 1508.7).” These impacts, which usually result from the initial action, include changes in land use, water quality, social issues, and population density.

The area surrounding the SR 167 Build Alternative is planned for urban industrial development. Responsibility for the pattern and density of growth and development of the landscape is with the county and city governments. For the study area, Pierce County is responsible for the unincorporated areas. Fife, Puyallup, Edgewood, Milton, and Tacoma are each responsible for the geographic area within their boundaries. There are no secondary impacts that are associated with the SR 167 Build Alternative, however the rate at which development occurs would be changed by the Build Alternative and might result in more immediate impacts to critical resources.

## Affected Environment and Impacts

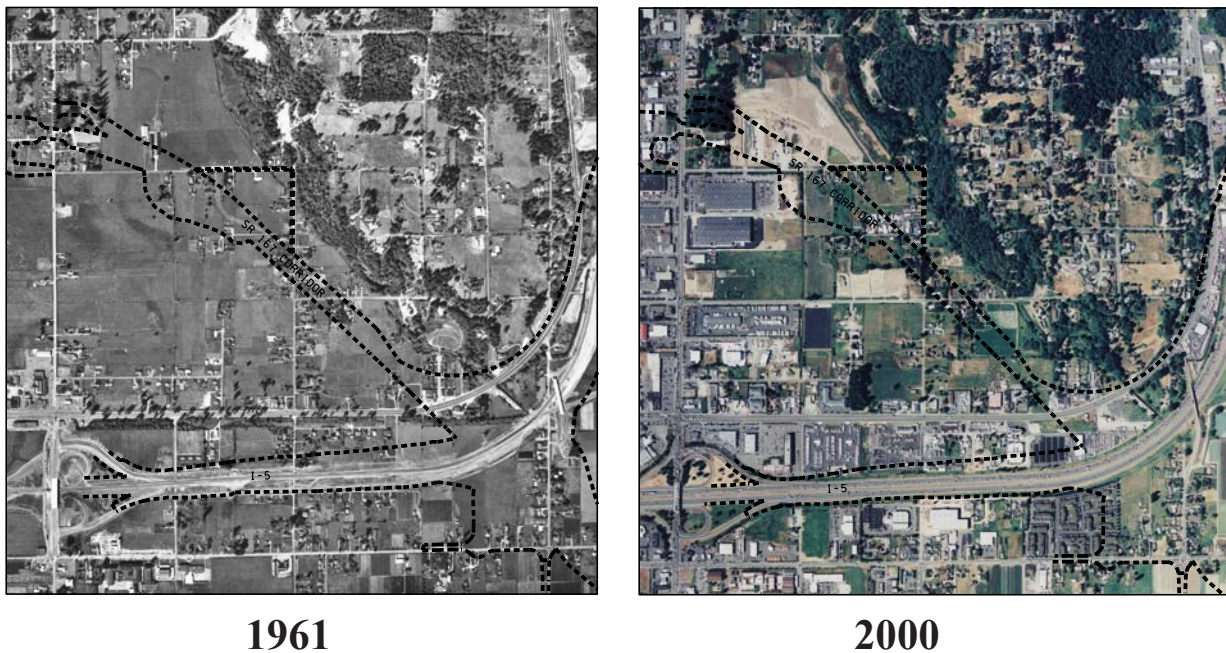
### Land Use/Socio-Economic

Historically, the Puyallup Tribe of Indians lived in villages from the foothills of what is now known as Mount Rainier to the shores of Puget Sound. According to the history of the Puyallup Tribe of Indians, the Puyallups lived in the area for thousands of years. Currently, the Puyallup Tribe of Indians offers programs serving an estimated 32,000 Native American people in the area.

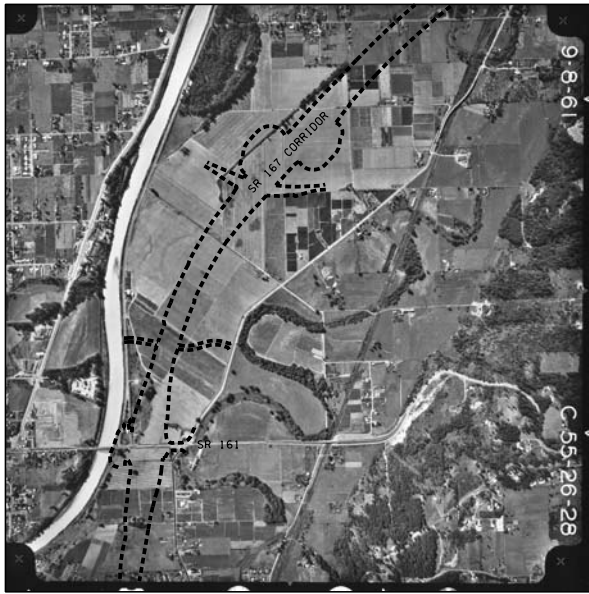
The Puyallup River Basin was one of the earliest areas settled in the Puget Sound area. Arriving Euro-American immigrants prized this basin for its deep-water embayment, large tracts of pristine old growth forests, fertile river valley soils and abundant runs of salmon. Homesteads and settlements began appearing as early as 1850 and the new arrivals initiated a series of actions to modify the landscape to fit their needs. The dredging and filling of the estuary, started in the late 1800's, was largely completed by 1930. Two hydroelectric dams were completed shortly after 1900. An extensive system of levees, dikes and set backs were started in the early 1900's and continue to be maintained today. In 1906 the White River was diverted into the Puyallup River Basin almost doubling the flows in the lower Puyallup River.

According to Washington State Extension Services, the Puyallup River Valley is the most arable land in the state. Anecdotal information collected indicates that the area has been farmed for at least three generations. As with much of western Washington, the project area has experienced significant development. Figure 9 shows the increased development in the Fife area from 1961 to 2000. Figure 10 shows the increase in development in the Puyallup area from 1961 to 2000.

**Figure 9. Aerial Photos of I-5 1961 to 2000 (Fife Area)**



**Figure 10. Aerial Photos of SR 161, 1961 to 2000 (Puyallup Area)**



**1961**



**2000**

Today, most of the population in Pierce County can be found in the western central third of the county along the I-5 corridor. This is because much of the eastern portion of the county is sparsely populated and much of it is in federal land ownership (U.S. Forest Service and National Park Service) or owned by private timber companies. The western portion of the county is where growth is occurring. This pattern is consistent with the planned growth identified in the comprehensive plan. The corridor includes approximately 216 acres of agricultural lands and 441 acres of developed property.

The Build Alternative is consistent with the planned and anticipated urban growth identified in the comprehensive plans for Pierce County and the cities of Fife, Milton, and Puyallup. Under the Build Alternative, approximately 380 to 400 acres of principally low-intensity land uses would be converted to transportation-related uses. The proposed project would not be expected to induce unplanned regional growth; however, it may have some influence on development within the study area. Although a similar overall level of growth and development would be expected by the year 2030 compared to the No Build alternative, the proposed project could alter the rate, timing, and location of future growth and development within the corridor area as planned by local and regional jurisdictions. Other influences on development including market forces, economic conditions, the availability of suitable land and adequate utilities and public services, would continue to be major factors in determining the pattern and rate of growth and development.

### **Farmland**

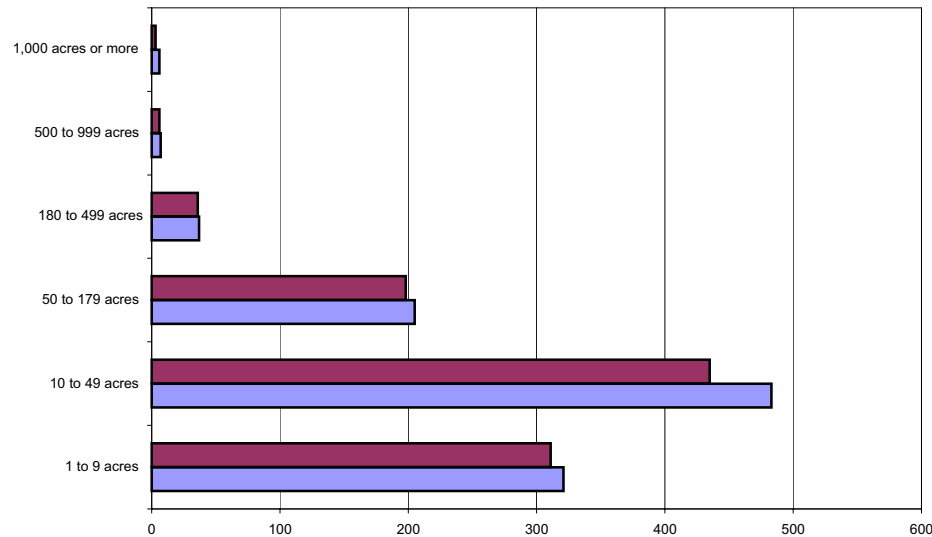
Pierce County leads the United States in rhubarb production, raising about 50 percent of the nation's supply. The Puyallup Valley's farmers also lead the state in producing lettuce, cabbage, radishes and green onions. The county leads the state some years in pumpkin productions, and Pierce County is second in tulips and daffodil production. The value of the 80 agricultural crops, livestock and



livestock products is \$80 million, which ranks 14th among the state's 39 counties. However, the county's agricultural base continues to shrink as farmers and farmland is lost to the urbanization process (Figure 11).<sup>1</sup>

According to the 1997 Census of Agriculture<sup>2</sup> conducted by the USDA, Pierce County had 58,750 acres of land in farming in 1992. By 1997, the acreage had dropped almost 7% to 50,750 acres. The market value of agricultural products for the county declined 18% to \$69,835,000 from 1992 to 1997. Declines occurred in all sizes of farms during the 5-year period.

**Figure 11. Decline in Farms in the Puyallup Valley between 1992 and 1997.**



Within the last ten years, the number of farmers actively farming has declined from 10-15 to 5-6 farmers in the geographic area of the proposed project. This trend is expected to continue to show a decline in acres farmed. In 2001, of the 618 acres of vacant land and designated farmland, approximately 279 acres (45%) of the land being farmed within the proposed project area were for sale. The Pierce County, City of Fife, and City of Puyallup comprehensive plans all identify this area as within the Urban Growth Boundary. It is reasonable to expect that farming will be only an incidental industry in the study area within the foreseeable future as the area has been rezoned for higher intensity land uses and property assessments have risen dramatically.

The SR 167 Build Alternative would be expected to accelerate the loss of farmland in the project area. Approximately 259-292 acres of land that is being farmed or could be farmed would be directly converted to transportation uses. This is consistent with the development of the area as planned under the Growth Management Act. This loss would not be replaced within the immediate project area.

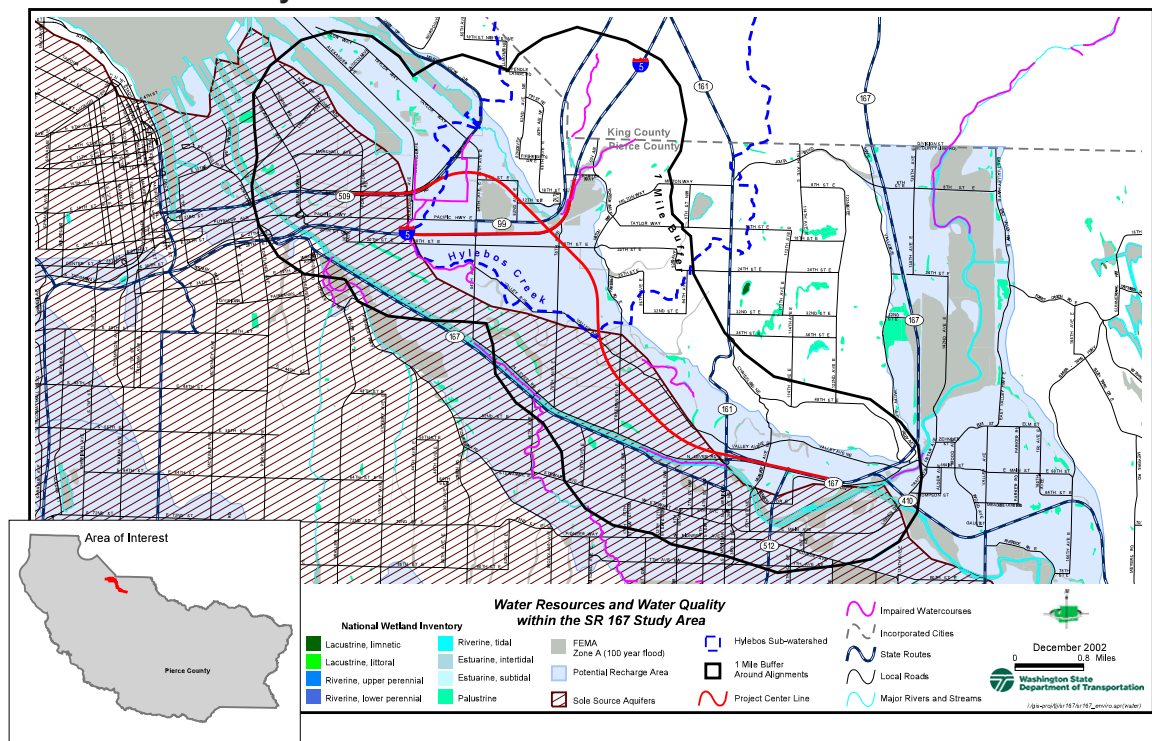
Other planned development in the area will result in the further loss of farmland. However, the impacts should be concentrated in the Urban Growth Boundary as planned under the Growth Management Act, rather than dispersed throughout the county and Puyallup Watershed.

Local farmers were interviewed regarding how the loss of their farms would impact the economy, produce availability, farm workers, and residents within the local region. All of those interviewed stated that the crops that they produce could be purchased elsewhere.

## Water resources

Four of the seven surface waters within the planning area are listed as threatened or impaired by the Washington State Department of Ecology (Ecology) under Section 303(d) of the Clean Water Act. These include: the Puyallup River; Hylebos Creek; Wapato Creek; and, Fife Ditch. Water resources for the study area are shown in Figure 12.

**Figure 12. Water Resources and Water Quality within the SR 167 Study Area.**



Construction of the proposed project could affect surface water by delivering sediment through soil erosion and introducing contaminants from spills. This project may effect groundwater by impacting wells in the study area. Best management practices (BMPs) and adherence to stormwater treatment regulations would serve to minimize the impacts of construction to water resources. Mainline construction, including the Hylebos Creek relocation, would require clearing and grading with associated impacts. Increased impervious surface could cause impacts as the roadway is used following construction, although stormwater treatment would occur. Interchange options would have very similar impacts. Options of the 54th Avenue interchange did not vary substantially, although the Loop Ramp would result in slightly greater construction impacts than the Half Diamond. The degree of impact varies among the Valley Avenue Interchange

1 Pierce County website About Us , <http://www.co.pierce.wa.us/pc/abtus/profile.htm>.

2 1997 Census of Agriculture, Volume 1 Geographic Area Services, "Table 1. County Summary Highlights:1997.

options, the Freeman Road option has the fewest construction impacts but the most impacts from use. Among the SR 161 Interchange options, the Urban Option operates the most efficiently but has the greatest construction impact.

To offset the impacts of the Build Alternative, stormwater runoff would be treated in a manner consistent with the Washington Department of Ecology's *Stormwater Management Manual for Western Washington*. In addition, a Riparian Restoration Plan is being developed which would provide some stormwater treatment as well as other ecological functions such as wildlife habitat. The Riparian Restoration Plan would protect and enhance undeveloped land along portions of Hylebos Creek and Surprise Lake Drain.

## **Wetlands**

Wetlands provide important economic and environmental functions, such as protection from floodwaters, filtering sediment and pollutants, and providing spawning areas for commercially important fish as well as habitat for many important species of plants and wildlife. Between 1780 and 1980, Washington has lost an estimated 31 percent of its wetlands through filling, dredging, and development. Wetlands are classified as Category I, II, III, and IV. This rating system was designed to differentiate between wetlands based on wetland functions and values, sensitivity to disturbance, rarity of the wetland type, and whether the wetland can be replaced. Category I is the highest rating and refers to only a small percentage of wetlands in Washington State. No Category I wetlands occur in the analysis area. Category II wetlands are those that provide habitat for very sensitive or important plants or animals, are difficult to replace, or have very high function values, particularly for wildlife. These wetlands occur more commonly than Category I wetlands, but still need a high level of protection (buffer). Eight Category II wetlands occur in the study area, of which only three would be impacted by proposed construction. Category III wetlands have lower wetland function but are larger in size and not isolated from other habitat function. They require a moderate level of protection. Category IV wetlands are the smallest, most isolated and have the least diverse vegetation, but do provide an important function and value. There are no Category IV wetlands in the study area.

The SR 167 Build Alternative is expected to lead to some degradation of wetland function due to the addition of impervious surface to the area and the changed patterns in the hydrograph and increased sedimentation and contaminant loading. Under the Build Alternative up to 30.2 acres of wetlands could be impacted. Of these impacts, a total of 0.6 acres of Category II wetlands would be impacted. The remaining 29.6 acres would be impacts to Category III wetlands. Wetland impacts would result from filling activities associated with construction of the highway and associated features.

As the planned development for the area is constructed, wetlands will be impacted and habitat for wetland-associated species will be fragmented. Some of these impacts may be offset through requirements for compensatory mitigation.



## **Fish, Wildlife and Threatened and Endangered Species**

### *Wildlife*

Wildlife species in the study area varies with habitat type, location, and level of disturbance. The project area encompasses several major habitat types including: urban areas; agricultural lands; shrub lands; forested areas; and freshwater and riparian wetlands.

A maximum of 250 acres of moderate to low quality wildlife habitat, out of a total of more than 800 acres in the study corridor, would be directly impacted by the project. Removal of vegetation during construction would reduce habitat value for wildlife and would cause permanent losses of wildlife habitat in these areas.

The corridor intersects three forested wildlife habitat areas, including an experimental cottonwood tree farm. 29 acres of forested areas would be directly affected by construction. These habitats consist of mature deciduous and mixed deciduous-conifer forest. Construction within the corridor would fragment the forest stands and cause permanent reductions in this type of habitat in the project area.

The project would impact approximately 133-154 acres of agricultural lands, and eliminate an additional 60-66 acres of grass/shrub habitat.

The steep, forested slope east of Hylebos Creek (outside of the project area) is expected to support a variety of birds and mammals. It is anticipated that impacts to wildlife in this habitat would be limited to displacement associated with increased noise and activity levels.

Additional analysis was conducted to determine potential project related impacts to migratory birds per the Migratory Bird Treaty Act (MBTA). The MBTA specifies that no one may take, possess, import, export, transport, sell, purchase, or barter, any migratory bird, or parts including nests and eggs unless authorized by a valid permit. The MBTA includes 861 protected species based on the revised list. Based on the analysis of existing information on species distribution and occurrence, and habitat preference and availability in the study area, up to 211 species of birds could potentially occur in the vicinity of proposed SR 167: Puyallup to SR 509 project. Occurrence includes nesting, foraging, wintering, and seasonal migration through the study area.

Construction-related impacts are expected to be limited to those migratory birds that would have nested in the study area. However, their dispersal could also affect other birds that occur throughout the greater MBTA study area and beyond. Suitable unoccupied nesting habitat may be present in the MBTA study area that could support displaced birds, but this is uncertain. Short-term impacts could result in some birds not successfully reproducing that otherwise would be successful under the no build alternative. Some birds could attempt to nest within the study area, but nesting may fail due to increased disturbance. Since no rare or unique habitat types (e.g. prairies, bogs, old growth forest, and estuaries) will be affected during construction, short-term disturbances are not expected to adversely impact migratory bird populations in the MBTA study area.

The proposed riparian restoration plan (described in section 3.2) has the potential for both positive and negative impacts to wildlife species. The most notable positive benefit of the plan is the preservation and restoration of a fairly large contiguous block of land in an urbanized setting. The restoration of the property would benefit small and moderate sized mammals and bird species that require less fragmented habitat than currently exists in this vicinity. The proposal probably would have minor potential to benefit larger mammals that require very large home ranges to support them.

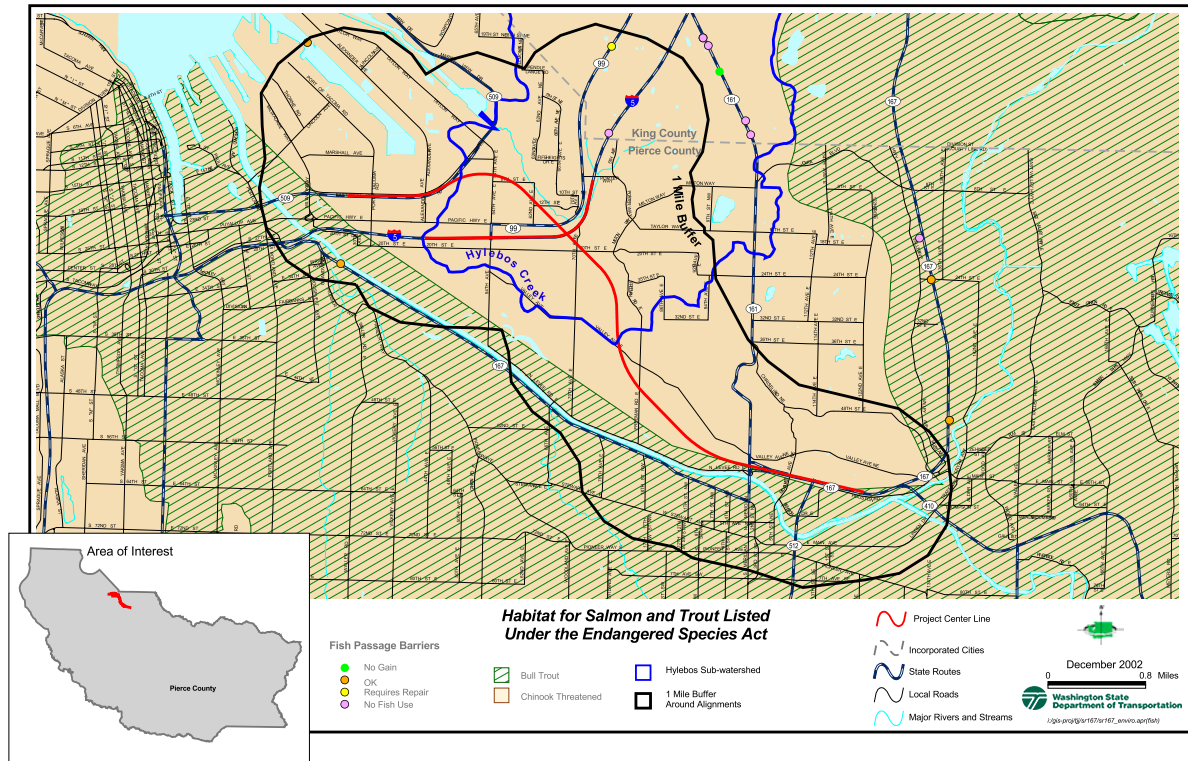
The proposal would increase the ability of wildlife to travel in a north-south direction along the Hylebos creek, but would result in an impediment to east-west travel due to the SR 167 extension being placed on fill instead of a bridge structure.

As the planned development for the area is constructed, wildlife habitat will be converted to urban industrial development or fragmented. The fragmentation of habitat results in more pressure on the species within the remaining habitat. Stresses can include reduced access to food and higher densities of animals that can result in increased disease and/or aggression. Some of these impacts may be offset through the project design and the riparian restoration plan.

#### *Fish*

Habitat associated with salmon and trout listed under the Endangered Species Act (ESA) is identified in Figure 13. Potential reductions in water quality associated with project construction would be expected to have impacts on fish in the project area. Wapato Creek, Hylebos Creek, the Puyallup River, and Surprise Lake Drain are located in the immediate vicinity of the corridor, and the potential exists for construction activities to increase runoff and sedimentation to these waterways. Reductions in water quality due to project construction would be temporary and would not permanently reduce fish spawning and rearing habitat.

**Figure 13. Habitat for salmon and trout listed under the Endangered Species Act.**



The most notable construction-related impacts to fisheries resources would occur from new and/or modified crossing structures (bridges and culverts). The existing steel bridge over the Puyallup River (Northbound SR 167) would be removed during mainline construction. The existing concrete bridge (Southbound SR 167) would be widened, or a new, wider structure built. Demolition of the bridge could potentially cause adverse impacts to fisheries resources due to debris entering the water. It is anticipated that permit conditions that specify when the work can be done and methods that must be employed to avoid damages to aquatic resources would be included and would help reduce the impacts. Because the proposed replacement Puyallup River bridge is a span bridge, it would have a much lower impact on fisheries resources than a bridge with piers located within the wetted perimeter of the river. Impacts would be limited to primarily construction erosion and sedimentation.

The riparian restoration proposal, which would restore floodplains with riparian vegetation along the lower Hylebos Creek and Surprise Lake Drain, would require the acquisition and removal of human made structures and farmland. Historically, Hylebos Creek had a strong salmon run. However, salmon stocks continue to decline as a result of human development and encroachment, despite efforts to reverse this downward trend. The riparian restoration proposal addresses many of the limiting factors of the Lower Hylebos Creek's ecosystem, and restores many of those natural ecosystem functions. Some of those limiting factors include altered hydrology, lack of riparian forests, loss of stream complexity and large woody debris in the channels, juvenile salmon rearing areas and increases in temperature.

The riparian restoration project would require relocating approximately 4500 lineal feet of Hylebos Creek. The relocation would have its own associated impacts that generally would be short term, such as temporary sedimentation until the new channel reaches equilibrium. The baseline condition of the creek would be improved by meandering of the stream, therefore increasing the overall channel length and capacity. The stream would be restored to a more natural condition, rather than a ditched, straightened channel. The newly created streambanks would be revegetated with native trees and shrubs to increase food chain support, increase shading, and reduce sediment loads in the system. In addition, four county road crossings, one I-5 crossing, and a private crossing would be eliminated and replaced with crossings designed to meet current WDFW fish passage criteria. Eliminating crossings entirely, and replacing those that are still necessary, with “fish friendly” crossings, would make additional spawning and rearing habitat available. Addressing stream crossings, establishing an ecologically functional riparian zone, and increasing flood plain storage, is a major step in salmon production and aiding in salmon recovery.

The Valley Avenue Interchange is the only project interchange with options that would require stream crossing modifications, removals, or additions. The number of crossing structures associated with Wapato Creek in the Valley Avenue vicinity depends on the option selected. The impacts of the new and/or modified structures can vary depending on the design. Generally, higher bridges and wider culverts have less impact on fisheries resources. Culvert replacement requires in-water work and would therefore impact aquatic habitat at least temporarily, even if a culvert was replaced with a clear-span bridge.

The riparian restoration plan would require the relocation of approximately 5000 lineal feet of Surprise Lake Drain. Because periodic “cleaning” clears the drain/creek of vegetation, there would be no appreciable loss or degradation of habitat after relocation. The relocation does present the possibility of enhancing the waterway with riparian vegetation and fish passage improvements so that the stream is more fish friendly. These restoration efforts would greatly enhance rearing habitat for juvenile salmon and trout during high flow events and would provide shelter from predation by larger fish. However, if the current management practices (ditch cleaning) by private landowners continue following roadway construction, there would be little change in fisheries value.

As the planned development for the area is constructed, there would be further pressure on water quality and the hydrograph (pattern of water flow). This can result in reduced habitat quality for fish. Some of these impacts may be offset through requirements for conservation measures and compensatory mitigation.

### *Vegetation*

The Carson Chestnut Tree (Figure 14) is located between the off-ramp at existing terminus of SR 167 and the proposed continuation of SR 167. This tree is considered to be the oldest and largest chestnut tree in Washington, and one of the largest in the country. The SR 161 interchange options are located near this tree. Efforts to minimize detrimental impacts to the tree would be made during design and construction.



**Figure 14. Carson Chestnut Tree**



*Threatened and Endangered Species*

A biological assessment and consultation with the U.S. Fish and Wildlife Service and NOAA Fisheries is being conducted for species listed under the Endangered Species Act. This assessment evaluates the impact of construction, operation, and associated development of the Build Alternative. Table 1 illustrates a preliminary effect determination for species regulated under the ESA.

**Table 1. ESA Preliminary Effect Determination**

COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS	PRELIMINARY EFFECT DETERMINATION
Bald eagle	<i>Haliaeetus leucocephalus</i>	Threatened	NLTAA
Marsh Sandwort	<i>Arenaria paludicola</i>	Endangered	NE
Golden Paintbrush	<i>Castilleja levisecta</i>	Threatened	NE
Water Howellia	<i>Howellia aquatilis</i>	Threatened	NE
Chinook Salmon	<i>O. tshawytscha</i>	Threatened	LTAA
Bull Trout	<i>Salvelinus confluentus</i>	Threatened	LTAA
Coho Salmon	<i>O. kisutch</i>	Candidate	LTSI

NE = No Effect

LTAA = Likely to Adversely Affect

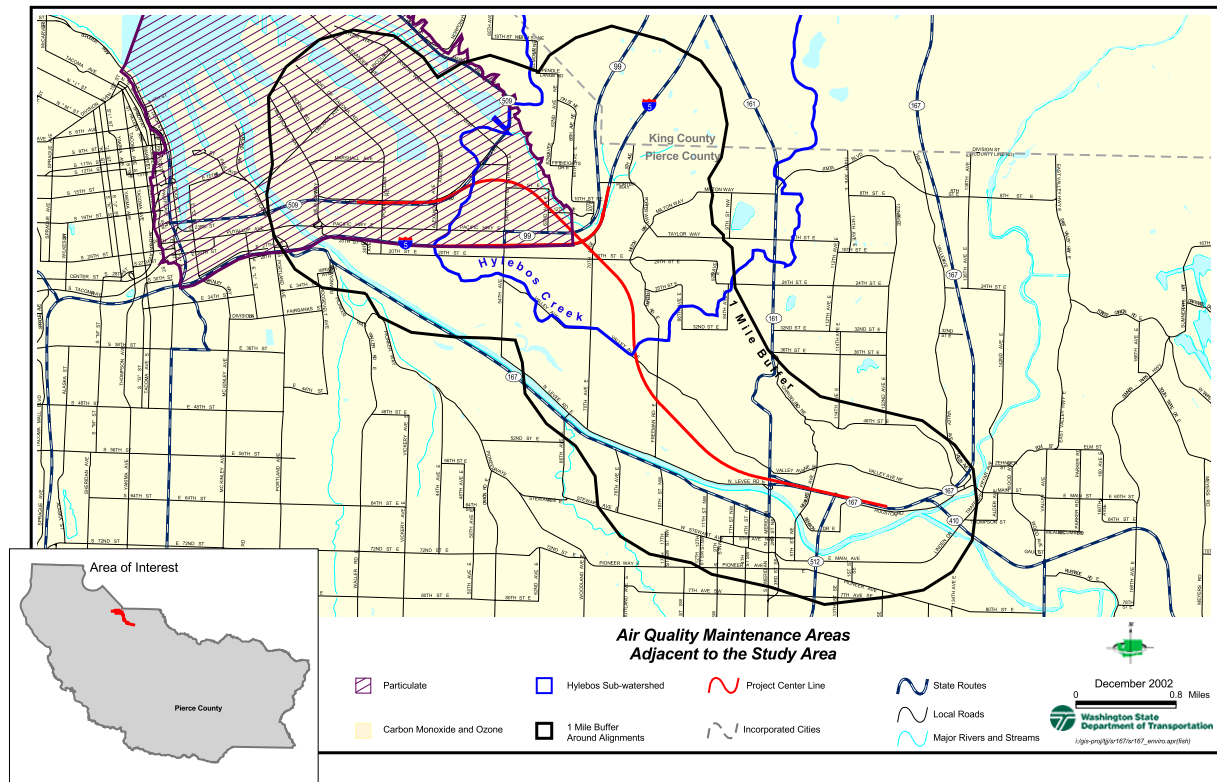
NLTAA = Not Likely To Adversely Affect

LTSI = Likely To Significantly Impact

**Air Quality**

The U.S. Environmental Protection Agency has mapped all areas of the United States where the air quality standards are either met or not met. Nonattainment areas are geographical regions where air pollutant concentrations exceed the National Ambient Air Quality Standards (NAAQS) for a pollutant. Maintenance areas are regions that comply with the NAAQS. The proposed SR 167 Build Alternative lies within ozone, PM10, and carbon monoxide maintenance areas (Figure 15).

**Figure 15. Map of Air Quality Maintenance Areas**



Construction impacts for both the No Build and Build Alternatives are from dust and particulate matter generated during demolition, land clearing, ground excavation, and other earthwork. These impacts would vary from day to day depending on the level of activity, specific operations, and weather conditions. Mitigation for construction generated dust include spraying water or other dust control liquids, covering trucks, washing truck wheels, sweeping local streets frequently, and using quarry spill aprons at entrances to reduce mud. Other air quality construction related impacts include the emission of carbon monoxide and ozone precursors in exhaust emissions of heavy equipment. Mitigation for these impacts include routing trucks to minimize waiting time, and requiring appropriate emission-control devices on all construction equipment.

The operational impacts were evaluated through a conformity analysis and a hot-spot analysis. The conformity analysis demonstrated that the project would not cause or contribute to any new violation of the air quality standards. The hot-spot analysis was done for carbon monoxide only and examined the three groups of intersections in the project area with the worst level of service and highest traffic volumes. The analysis demonstrated that the project would not cause any violations of the carbon monoxide standards at these intersections in the design year of 2030.

## Noise

Construction noise from the Build Alternative would occur throughout the construction season. Noise levels would depend on the type, amount, and location of construction activities. Most construction would occur during the daytime.



The completed SR 167 would generate noise from traffic using the facilities. Only nighttime construction work is regulated by local ordinances, and WSDOT requires contractors to adhere to a variety of standard specifications aimed at reducing and minimizing nighttime construction noise impacts. When the Build Alternative is in operation, new noise barriers would be installed to reduce traffic noise at one site along the proposed roadway if it is found to meet WSDOT and FHWA criteria.

## **Displacements, Disruptions, and Relocations**

Right-of-way acquisitions would impact homes, businesses, multi-family units, and farms. Depending on the interchange option, the project may displace 105-120 single-family residential units, 12-63 multi-family residential units, 25-32 businesses, and two farming operations. At the 54th Avenue interchange, the Loop Ramp Option would impact fewer homes, but more businesses than the Half Diamond. At the Valley Avenue interchange, displacements would depend on final design, but the Valley Avenue Realignment Option is the only option to affect multi-family units. Impacts of the SR 161 options are similar in that they would disrupt/displace nearly the same number of properties. Some displacements may be avoided through final design measures, including the use of retaining walls and other modifications resulting in reduced right-of-way requirements. Where right-of-way acquisition is needed, the acquisition and relocation program would be conducted in accordance with the Uniform Relocation and Real Property Acquisition Policies Act of 1970.

## **Transportation**

Traffic impacts are based on forecasts for the design year of 2030. Peak period congestion levels on I-5 would be better under the Build Alternative. Major circulation changes on the freeway system would occur with the project and substantial reductions in traffic would occur on I-5 between SR 167, 54th Avenue East, and Port of Tacoma Road as Port of Tacoma traffic would be diverted to SR 509 and SR 167. Truck traffic on local streets would be reduced by the project and local improvements. Safety would be improved by these reductions in traffic volumes on local roads. The realignment of 20th Street East would create a more circuitous route for drivers to and from Milton. Impacts from construction would include temporary detours and road closures. The mitigation measures for these construction impacts include notice to property owners affected by detours, coordination with local jurisdictions, agencies, and utilities, and phased construction to minimize road closures.

## **Pedestrian and Bike Facilities**

The construction impacts are the same for all options and include increased dust, additional heavy truck traffic, fractured and broken pavement, detours around construction zones, and traffic delays. Operational impacts would not differ between options at the 54th Avenue interchange, and will vary little among options at the other interchanges, although bike and pedestrian users, where they exist, would likely experience difficulties. The project would accommodate non-motorized transportation modes in the study area using best practice design, including paved shoulders and sidewalks for bicyclists and pedestrians, signals and pedestrian crosswalks where warranted, and work zone traffic control plans

that take into account non-motorized route continuity needs. Non-motorized vehicles would be restricted on SR 167 from the 54th Avenue East interchange to 20th Street East. A separate multi use trail would be provided between 54th Avenue and SR 99.

## **Cultural Resources**

Cultural resources that may be impacted by project construction include historic properties and archaeological sites. Only the Half Diamond Option would affect cultural sites at the 54th Avenue interchange. At the Valley Avenue interchange, the Valley Avenue Option would affect the fewest sites, the Valley Avenue Realignment would affect more, and the Freeman Road Option would affect the most by a substantial margin. Impacts do not vary among options at the SR 161 interchange. No operational impacts are expected. Measures to reduce or avoid impacts would be taken at all eligible sites.

## **Energy**

Potential impacts from the proposed improvements would primarily affect petroleum fuel resources. During construction, various types of petroleum would be consumed in the manufacture of construction supplies and materials and in the operation of construction equipment. However, construction of the proposed SR 167 project would not result in a measurable impact on regional or local fuel availability. During operation, vehicles using the new freeway and annual maintenance activities would consume energy resources. These same vehicles are likely to consume the same or more energy on adjacent highways and local roads they currently use. Energy savings over the current roads used would be from a reduction in using congested roadways and more direct travel. In addition, it is likely that truck traffic would be redirected from local roads to the new highway. This change could reduce maintenance needs on local roads. The differences between the interchange options on fuel consumption are insignificant.

## **Hazardous Materials**

It is possible that some of the structures to be acquired by WSDOT may contain Asbestos Containing Materials (ACM) and Lead Based Paint (LBP). In addition, accidental hazardous materials spills may occur due to construction activities throughout the project. Two properties within the proposed right of way contain known arsenic. Several intersections within the study area have known petroleum-contaminated groundwater and soil from gas stations. There are no known contamination sites at the proposed 54th Avenue interchange. At the proposed Valley Avenue interchange, the Freeman Road Option impacts a site containing petroleum-contaminated groundwater and soil. The only hazardous material site of concern included in all three SR 161 interchange options is the SR Puyallup River/Meridian Street steel bridge, which is covered with lead-based paint. Mitigation measures to minimize potential impacts to surface water resources include erosion and spill prevention controls, which would be specified in a Spill Prevention Control and Countermeasure (SPCC) Plan required during construction.

## Visual Quality

The proposed Build Alternative would alter the landscape in the project area. Visual quality impacts are measured by quantifying vividness, intactness, and unity. Visual unity in those areas where the mainline traverses agricultural land would be reduced. The proposed Build Alternative would visually dominate urban/industrial areas. Where the proposed alignment would be built on a structure, the new visual line element would be dominant and would lessen the overall vividness. Mitigation measures are aimed at softening the presence of the new facilities and are based on guidelines for landscaping established by the WSDOT Roadside Classification Plan.

## Public Services and Utilities

Some public service facilities would be temporarily impacted due to traffic control and road closures. Temporary detours and time delays during construction would necessitate changes in established routes for the duration of construction. Telecommunication, natural gas, water, sewer, and solid waste services would be impacted by mainline construction. Prior to construction, utilities within the proposed corridor would be relocated if necessary. Service providers affected by construction would be notified in advance of the construction period. Few or no differences in impacts to these utilities would occur among interchange options. Operation of the proposed project would not impact public services or utilities negatively, but would have a positive impact. Due to improved mobility in the project area, emergency service response times would decrease.

## Cumulative Impacts

Cumulative impacts are defined by the Council on Environmental Quality's regulations implementing NEPA define as the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions (40 CFR Section 1508.7).

The analysis of cumulative impacts indicates that planned growth in population and employment, as expressed through *VISION 2020* and *Destination 2030*, and the development that will be associated with this growth are by far the most substantial actions affecting the magnitude and severity of cumulative impacts in the central Puget Sound region. Although the direct effects of the SR 167 Build Alternative would be expected to result in some impacts for some critical resources such as fish and aquatic habitat, their incremental contribution to overall cumulative impacts within the region would generally be very small when compared to the combined effects of other past, present, and reasonably foreseeable future actions.

The review of potential cumulative impacts also shows the following:

Recent and anticipated regulatory programs would help reduce the rate of hydrologic and water quality degradation in developing areas.

The relatively slow rate of large-scale redevelopment in urbanized areas and the

difficulty of incorporating effective stormwater control measures in densely developed areas makes it unlikely that the hydrologic conditions of the urbanized portions of streams in the study area will greatly improve within the 2030 timeframe.

Even with implementation of stormwater detention and treatment measures for all new development, increases in pollutant loads and reductions in seasonal base flows and associated increases in summer stream temperature is likely to result in further degradation of water resources. This is expected to be a substantial adverse cumulative effect.

Cumulative impacts on wetlands have been substantial within the state of Washington and could increase within the more urbanized study area and UGA as a result of greater pressure for growth and development within the Urban Growth Boundary.

Nearly all native salmon and trout populations in the region have experienced a severe declining trend since the human population began rapidly increasing over the past century. Recent listings of salmon and trout and the subsequent regulatory review are anticipated to reduce future impacts and begin reversing the process of species recovery. Even with this, habitat complexity within the urban growth area is not expected to replace all habitat functions that were previously lost.

Planned population growth and land use development in the study area and central Puget Sound region will increase the likelihood of substantial adverse cumulative impacts to fish habitat and populations.

Transportation programs included in Destination 2030, including the SR 167 Build Alternative, are expected to increase pressure for growth along major transportation corridors within the UGA, thus relieving pressure and reducing adverse impacts on the rural areas that contain the most functional fish habitat. The type of development is dependent on the comprehensive plans for the relevant county and city. For the SR 167 study area, the development would be primarily urban industrial.

Cumulative impacts on farmlands are expected to be substantial. This is a result of the urban designation of the area, the increasing land values that make farming less profitable, and lack of farmland protection policies.

There would be cumulative impacts on ecological function in the study area that would result in the need to manage water quality, low flows, and flood hazard. The access to fish and wildlife resources would require people to travel further. The culture of farming in the Puyallup River Valley would be replaced by an urban, industrial setting. These changes are occurring as a result of growth management within the state of Washington that seeks to manage the areas in which types of development occur. The study area is within the Urban Growth Boundary and it is expected that the cumulative impacts will be more substantial than in areas outside of the boundary.

The SR 167 Build Alternative supports the planned growth in the area but does

not control whether or not growth is to occur. As the project is designed, effort will be made to avoid, minimize and compensate for impacts so as to reduce the contribution of this project to cumulative impacts in the area by using current guidance on avoidance and design.

### **Permits and Approvals**

Before the final project is constructed, a number of environmental permits and approvals would be obtained. These permits and approvals promote design methods that avoid and minimize environmental impact where possible. When avoidance and minimization of impact isn't enough to eliminate impacts, compensatory mitigation is negotiated to replace ecological functions that are lost. Table 2 identifies the permits and approvals that would be required for the project.

### **Unresolved issues**

This section will be completed upon publication of the FEIS and will include issues raised by comments during the DEIS review that were not resolved in the Final EIS.

**Table 2. Environmental Permits and Approvals that will be obtained for the SR 167 Build Alternative.**

<b>Permit or Approval</b>	<b>Responsible Agency</b>	<b>Conditions Requiring</b>	<b>Statutory Authority</b>
NEPA	FHWA and WSDOT	Activities that require federal permits, approvals, or funding trigger NEPA procedural and documentation requirements.	42 USC 4321 23CFR 771 40 CFR 1500-1508
SEPA	Ecology	Any activity not categorically exempt triggers SEPA procedural and documentation requirements.	RCW 43.21C WAC 197-11, WAC 468-12
Section 106	OAHP/SHPO	Potential impacts to historic or archaeological properties trigger Section 106 procedural and documentation requirements.	16 USC 470 Sec.106 36 CFR 800 RCW 43.51.750
Critical Areas Ordinances	Pierce County, Fife, Puyallup, and	Local approval or permits may be required for projects impacting areas defined as "critical" by counties and cities	RCW 90.58 RCW 36.70A
Clearing, Grading and Building Permits.	Pierce County, Fife, Puyallup, and Edgewood	Clearing and grading of land for development with impacts outside WSDOT right of way; (includes connecting streets, frontage roads, etc.). Construction of any building for human habitation.	RCW 36.21.080
Temporary Air Pollution	Ecology, PSCAA, and local fire protection agencies	Pollutants above allowed levels for temporary periods; includes building demolition and brush burning. Regulations may limit the type, size or timing of brush burning.	RCW 70.94
JARPA	COE	Joint application for COE Section 10 and Section 404 permits, Coast Guard bridge permits, WDFW Hydraulic Project Approvals, Shoreline Management Permits, approvals for water quality exceedance, Section 401 water quality certifications, and DNR Aquatic Resource Use Authorization.	See permits, certificates and approvals included in JARPA.
Section 9 (Bridge) Permit	US Coast Guard	Bridges in navigable waters, including all tidally influenced streams used by boats over 21 feet in length.	33 USC Sec. 9 33 USC 11 33 CFR 114 & 115 FHWA Sec 123(b)
Section 10 Permit	COE	Obstruction, alteration, or improvement of any navigable water including bridges.	Rivers & Harbors Act, Section 10 33 CFR 403
Hydraulic Project Approval	WDFW	Projects that will use, divert, obstruct, or change the natural flow or bed of any state waters (e.g., culvert work, realignment, bridge replacement).	RCW 77.55.100 WAC 220-110
Section 401 Water Quality Certification	Ecology Puyallup Tribe	Activity requiring a federal permit/license for discharge into navigable waters.	CWA Sec 401 RCW 90.48.260 WAC 173-225
Section 402 NPDES Municipal Stormwater Discharge Permit	Ecology	Discharge of pollutants into state waters, including wetlands and groundwater, from stormwater generated by the operation of WSDOT facilities within the South Puget Sound Water Quality Management Area.	CWA Sec 402 WAC 173.226
Section 402 NPDES Construction Permit	Ecology	Discharge of pollutants into state waters, including wetlands and groundwater, from stormwater generated on construction sites five acres or more in size.	CWA Sec 402 WAC 173.226
Section 404 Individual Permit	COE and USEPA	Discharging, dredging, or placing fill material within waters of the US or adjacent wetlands.	CWA Sec 404 33 USC 1344 33 CFR 330.5 & 330.6
Temporary Water Quality Disturbance	Ecology	Activity resulting in temporary minor increase in turbidity.	WAC 173-201A-110(3)



**Table 2. Environmental Permits and Approvals that will be obtained for the SR 167 Build Alternative. (continued)**

<b>Permit or Approval</b>	<b>Responsible Agency</b>	<b>Conditions Requiring</b>	<b>Statutory Authority</b>
Coastal Zone Management Certificate	Ecology	Applicants for federal permits/licenses are required to certify that the activity will comply with the state's Coastal Zone Management program (Shoreline Management Act).	CZMA Sec 6217 16 USC 1451 et seq. 15 CFR 923-930 RCW 90.58
Shoreline Permits	Ecology Pierce County, Fife, and Puyallup	Development or construction valued at \$2,500 or more interfering with shorelines or water use; lakes & reservoirs over 20 acres, streams over 20 cfs, lands 200 ft inland from OHWM, marshes, swamps, bogs & deltas.	RCW 90.58 WAC 173-14 through 173-28
Floodplain Development Permit	Ecology Pierce County, Fife, Puyallup, and Edgewood	Any structure or activity that may adversely affect the flood regime of streams within the flood zone.	RCW 86.16 WAC 173-158
Endangered Species Act Consultation	USFWS/NOAA Fisheries	Projects affecting species and critical habitat of species listed under the ESA require consultation with the applicable federal agency.	16 USC 1531-1543
Magnuson-Stevens Act	NOAA Fisheries	Project affecting essential fisheries habitat are required to consult with NOAA Fisheries.	
Fish Habitat Enhancement Project Application	WDFW	Streamlined process for projects designed to enhance fish habitat. Application is in addition to JARPA.	
Noise Variance	Pierce County, Fife, and Puyallup	Construction and maintenance activities during nighttime hours may require a variance from local noise ordinances. Daytime noise from construction is usually exempt.	WAC 173-60
Hazardous Waste Tracking Form	Ecology	A WAD tracking number from Ecology is required for transport, storage, transport, or disposal of dangerous waste.	WAC 173-303
Archeological Resources Protection Permit	Tribes Federal landowners, e.g. BLM, COE, NPS	Excavation or removal of archeological resources from tribal or federal land.	43 CFR 7.6 – 7.11

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